Claims

1. – 9. (canceled)

10. (currently amended) In a spectral audio encoder, a computer-implemented method comprising:

performing a frequency transform on plural time domain audio samples to produce a block of frequency coefficients; and

compressing the block of frequency coefficients; wherein the compressing includes,

quantizing the block of frequency coefficients;

computing a quality measure based upon the quantized block of frequency coefficients;

entropy encoding the quantized block of frequency coefficients;

computing a bit-count measure based upon the entropy encoded block of frequency coefficients;

comparing [[a]] the quality measure for the block to a quality target; and

comparing [[a]] the bit-count measure for the block to a minimum-bits target and to a maximum-bits target.

11. (canceled)

12. (original) The method of claim 10 wherein a first quantization loop includes the quantizing and the comparing the quality measure, and wherein a second quantization loop de-linked from the first quantization loop includes the comparing the bit-count measure.

13. (original) The method of claim 10 wherein the quality target, the minimum-bits target, and the maximum-bits target are for the block.

14. (currently amended) A computer-readable medium encoded with computer-executable instructions for causing a computer programmed thereby to perform a method of controlling quality and bitrate in [[an]] a spectral audio encoder, the method comprising:

performing a frequency transform on plural time domain audio samples, producing a block of

KBR:kbr   10/7/05   437229.doc   . 164252.1   Attorney Reference Number 3382-61340-01
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frequency coefficients;

     determining one or more target quality parameters, a first target quality parameter of the one or more target quality parameters indicating an acceptable audio quality;

     determining plural target bitrate parameters, a first target bitrate parameter of the plural target bitrate parameters indicating a minimum acceptable number of bits produced, and a second target bitrate parameter of the plural target bitrate parameters indicating a maximum acceptable number of bits produced; and

     compressing audio information, <u>wherein the audio information is the block of frequency coefficients,</u> wherein quantization of the audio information is based at least in part upon the first target quality parameter, the first target bitrate parameter, and the second target bitrate parameter<u>, and wherein the compressing includes:</u>

          <u>quantizing the audio information;</u>

          <u>computing a quality measure based upon the quantized audio information;</u>

          <u>comparing the quality measure to the first target quality parameter;</u>

          <u>entropy encoding the quantized audio information;</u>

          <u>computing a bit-count measure based upon the entropy encoded audio information; and</u>

          <u>comparing the bit-count measure to the first and second target bitrate parameters.</u>

15. (canceled)

16. (currently amended) The computer-readable medium of claim [[15]] <u>14</u> wherein the first target quality parameter, the first target bitrate parameter, and the second target bitrate parameter are for the block.

17. (canceled)

18. (canceled)

19. (original) The computer-readable medium of claim 14 wherein the compressing includes:
in a first quantization loop, adjusting the quantization until satisfaction of the first target quality

parameter; and

in a second quantization loop, adjusting the quantization until satisfaction of the first and second target bitrate parameters.

20. (original) The computer-readable medium of claim 14 wherein the first target bitrate parameter is a function of factors comprising an average bit count estimate, buffer fullness, and buffer sweet spot.

21. (original) The computer-readable medium of claim 14 wherein the second target bitrate parameter is a function of factors comprising an average bit count estimate, buffer fullness, and buffer sweet spot.

22. (original) The computer-readable medium of claim 14 wherein the first target quality parameter is a function of factors comprising a complexity estimate and goal bit count.

23. (original) The computer-readable medium of claim 22 wherein the complexity estimate is a composite of a past complexity estimate and a future complexity estimate.

-    24. (original) The computer-readable medium of claim 22 wherein the complexity estimate is based at least in part upon a complexity estimate reliability measure.

25. (currently amended) The computer-readable medium of claim 22 ~~wherein the audio information is a block of frequency coefficients, and~~ wherein the goal bit count is based at least in part upon size of the block and maximum block size.

26.-100. (canceled)

101. (new) In a spectral audio encoder, a computer-implemented method comprising:
performing a frequency transform on plural time domain audio samples to produce a block of frequency coefficients; and

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compressing the block of frequency coefficients, wherein the compressing includes,

quantizing the block of frequency coefficients;

comparing a quality measure for the block to a quality target; and

comparing a bit-count measure for the block to a minimum-bits target and to a maximum-bits target;

wherein a first quantization loop includes the quantizing and the comparing the quality measure, and wherein a second quantization loop de-linked from the first quantization loop includes the comparing the bit-count measure.

102. (new) The method of claim 101 wherein the quality target, the minimum-bits target, and the maximum-bits target are for the block.

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